ACSL '09 Practice P3 - Zeroes

Time limit: 1.0s **Memory limit:** 16M

ACSL Practice 2009

The *factorial* of a positive integer n, written as $n!$, is the product of the first n positive integers. That is,

$$n! = 1 \times 2 \times \cdots \times n$$

Given a positive integer n, find the number of zeros in the decimal representation of $n!$. Of course, leading zeros should not be counted. (Note that decimal representation means base ten representation.)

Example 1. There are 7 zeros in the decimal representation of $20!$.

$$20! = 1 \times 2 \times \cdots \times 20 = 2432902008176640000$$

Example 2. There are 2 zeros in the decimal representation of $7!$.

$$7! = 1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 = 5040$$

Example 3. There is no zero in the decimal representation of $4!$.

$$4! = 1 \times 2 \times 3 \times 4 = 24$$

Input Specification

The input contains a single positive integer $n \leq 100$.

Output Specification

The number of zeros in the decimal representation of $n!$.

Sample Input 1

```
20
```

Sample Output 1

```
7
```

Sample Input 2

```
7
```

Sample Output 2

```
2
```

Sample Input 3

```
4
```

Sample Output 3

```
0
```